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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

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BUREAU OF
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THE PLANT DISEASE REPORTER

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THE PLANT DISEASE SURVEY

OFFICE OF MYCOLOGY AND DISEASE SURVEY

Vol. XV April 1, 1931 Number 3

VEGETABLE DISEASES

BACTERIAL CANKER OF TOMATO REPORTED FROM MEXICO

Miss Mary K. Bryan of the Bureau of Plant Industry sends the following report:

> "On March 12 I received from Mr. Dean, of the Inspection Service, a partly ripened tomato from Sinaloa, Mexico, intercepted at Nogales, Arizona, by G. C. Martin. This fruit bore a scattering of halo spots typical of bacterial canker. Poured plates were made and Aplanobacter michiganense, the causal organism of bacterial canker of tomato, was readily isolated. This is the first report of this disease from Mexico."

POTATO LATE BLIGHT IN TEXAS

Under a separate cover I mailed some specimens of potato late blight (Phytophthora infestans) collected at Brownsville, Texas, on February 24, 1931 Some fields were heavily infected, others, however, were but slightly attacked It was reported that about from 40 per cent to 50 per cent of the 1931 potato crop was more or less affected. The farmers used as a preventive, copper sulphate and lime. Some used Bordeaux mixture to which they added from three-quarters to one pound of lime/a pound of Bordeaux.

This disease is prevalent in the Valley but usually infestation is noticed late in the season. This year on account of excessive rains and favorable temperature for the fungus to develop, it infected the potatoes very early. The loss is not estimated yet. (A. A. Stalmach, Asst. Plant Quarantine Inspector)

DISEASES CAUSED BY NEMATODES

TYLENCHUS DIPSACI FOUND ON NEW HOST

Dr. Steiner has just identified Tylenchus dipsaci from a new host, Dianthus barbatus (sweet william), sent in by Frank P. McWhorter and F. D. Bailey of Corvallis, Oregon, and collected near Portland, Oregon.

TYLENCHUS PRATENSIS PARASITIZING YAMS FROM WEST AFRICA

Tylenchus pratensis is a harmful but mostly overlooked plant parasitic nema, attacking a wide variety of host plants. It lives endoparasitic in roots, rhizomes and tubers and is at present known to be widespread in Northern Europe and in the United States of America, but is also recorded from Brazil (Irish potatoes). The present finding is the first from Africa and the first from yams (Dioscorea sp.). According to A . B. Wells, Plant Quarantine Inspector at Philadelphia, who made the sketch, the symptoms on yams are as follows: "A splitting of the skin gives it a corky appearance and a dark brown dry rot extends irregularly into the flesh much as in Tylenchus or Phytophthora-infested potatoes. (G. Steiner, See Figure 2)

MISCELLANEOUS NOTES

Some additional reports on nematode diseases will be found in the section for Plant Quarantine notes.

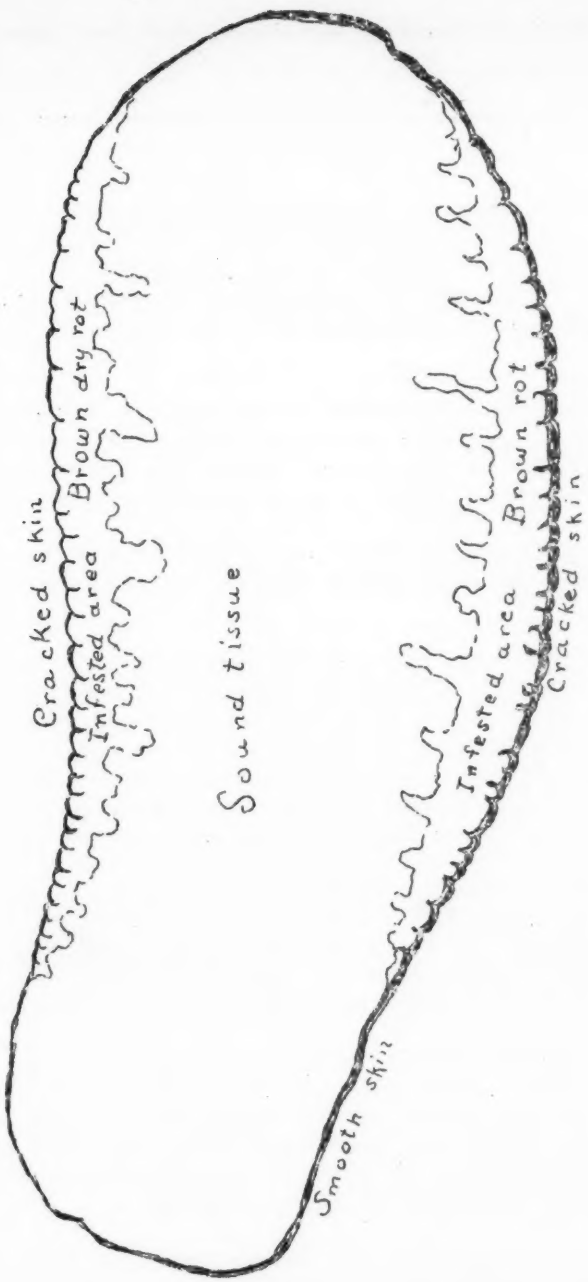

Figure 2. Longitudinal section of yam (Dioscorea sp.) affected by Tylenchus pratensis, from West Africa, February 9, 1931. Yam was 18 by 6 inches and weighed from 7 to 10 pounds. (After sketch by A. B. Wells)

DISEASES OF FRUIT AND NUT CROPS

BUD ROT OF COCONUTS IN PORTO RICO

I. L. Torres, Director,
Bureau of Agricultural Development,
Department of Agriculture and Labor, Porto Rico.

The work on the eradication of the coconut bud-rot (caused by Phytophthora faberi) has been continued during the year. In spite of the great efforts exerted by this bureau during the last five years, it has been impossible to check a pest that is destroying our coconut plantations.

This disease made its first appearance in the Mayaguez district in 1923. In the first survey carried out, there were reported 700 cases of diseased palms.

It was in 1925 that the work of eradication of the bud-rot really began. At that time the legislature adopted Act No. 35, authorizing the commissioner of Agriculture to destroy any diseased plant considered detrimental to the agricultural interests of the island. Up to the present, the most effective method that can be recommended is the destruction by fire of all diseased palms. By this means, sources of inoculum are destroyed and contagion from them, largely prevented.

Summing up the eradication work since its beginning, we can report that up to June 30, 1930, the coconut bud-rot has killed 6,897 coconut palms (Cocos nucifera) and 858 hat palms (Sabal causiarum). The agent in charge of this work reports that 229 farms were inspected on which 3,381 coconut palms and 242 hat palms were destroyed as a sanitary measure.

We have observed that the disease has spread to other zones after the hurricane of 1928. Only recently, numerous cases of the disease have appeared in the coconut groves of the region between San Juan and Humacao, this region having, until now, been considered free from this malady. Fortunately our legislature has recently appropriated the sum of $10,000 to extend the eradication work to these regions.

According to a report of the survey made from July to December, 1930 by the agricultural agents and the inspector in charge of this project in the Island, the following is the situation of the distribution of the coconut bud-rot:

Acreage planted to coconuts	17,362
Number of palms on the farms	780,888
Number of hat palms on the farms	418,378
Coconut palms infested	5,071
Hat palms infested	4,705

Of these 9,776 palms affected, 4,133 were destroyed during this period (July to December, 1930). We expect that by June 30, 1931, we shall have destroyed 100 per cent of these palms and we shall keep up the inspection and eradication of the new cases for one or two years, or until we have entire control of the disease.

Besides the work of eradication, we have been conducting our demonstrations for the improvement of cultivation methods in the coconut plantations.

STRAWBERRY DISEASES IN FLORIDA

An average of only 50 per cent of the strawberries picked this season in the Hillsborough and Polk County sections of Florida has been packed out for shipping, according to a letter received from Dr. A. N. Brooks of the Florida Strawberry Field Laboratory, Lakeland, Florida, March 13. The highest percentage has been about 70 per cent, and following heavy rains, only 20 to 25 per cent are packed out. Dr. Brooks attributes 90 per cent of the trouble directly or indirectly to cold weather and excessive rainfall.

There has been widespread lack of pollination which has resulted in deformed berries. Examination of blossoms discloses lack of pollen in many, and in others the pollen is not released. Another effect of cold weather has been an increase in the period between blossoming and ripening of fruit from the normal three or four weeks to five or six weeks, while fruit buds continue to push out at about the usual rate. This has resulted in an abundance of potential fruit on the plants, a single plant often carrying from 100 to 200 green berries. The fruit from such plants is of small size.

Another trouble has been the cracking of fruit due to the rain. There is a varietal difference in this respect in that Blakemore and Nick Ohmer do not crack to any extent, whereas Missionary is badly affected.

In Hillsborough County, there is a high percentage of plants seriously affected by root rot, on high land as well as low. Apparently the organism causing the trouble is one which is effective at low temperatures. As yet, Dr. Brooks has not been able to definitely establish the pathogenicity of the organisms isolated.

CRANBERRY FALSE BLOSSOM IN WISCONSIN

H. F. Bain reports that on the large cranberry property at Cranberry Lake, Wisconsin, where false blossom was first found in 1926, and was probably first introduced in 1924, the spread of the disease has been rapid. (See U.S.D.A. circular 147, page 6). The disease is present in many parts of the property and there are at least five acres which are at least fifty per cent false blossom. (February 3, 1931).

CRANBERRY FALSE BLOSSOM IN CLATSOP COUNTY, OREGON AND PACIFIC COUNTY, WASHINGTON.

Observations on false blossom of cranberry in the Pacific Coast district from 1922 to 1925 showed that, contrary to experience in eastern cranberry districts, there was no apparent spread of the disease. (U.S.D.A. Bul. No. 1434, page 5). Collections of insects uniformly failed to disclose the presence of the blunt-nosed leafhopper, Euscelis striatulus Fall., which is now known to transmit the disease.

The district was surveyed again in 1930. It was plainly evident that the disease has not increased since 1925. On the contrary there appeared to be an actual decrease. This might be explained by the adverse weather conditions experienced the past two or three years. The district has suffered from summer drouths, uncommonly severe winters and frosty springs. It is frequently observed in eastern cranberry districts that diseased plants succumb more readily than healthy ones.

Further insect collections confirmed previous findings that the leafhopper population is relatively low on these bogs, and that Euscelis striatulus does not occur.

The principal cranberry troubles of recent years were reported to have been frost, drouth, and increase of certain insect pests. (H. F. Bain)

MARKET PATHOLOGY

DISEASES FOUND ON CHICAGO MARKET

G. B. Ramsey

CELERY FROM CALIFORNIA

Late Blight (Septoria apii) severe on petioles as well as leaf blades in some stock.

CHICORY FROM CALIFORNIA

A type of injury very similar to Tip Burn in lettuce has been observed causing considerable damage. Bacterial Soft Rot commonly follows after this type of trouble.

GARLIC FROM CALIFORNIA

Blue Mold Rot (Penicillium) severe in one car.

MUSTARD, CHINESE BROADLEAVED FROM TEXAS

Fifty baskets badly spotted with White Rust (Albugo candida).

PEPPER FROM MEXICO

One lot showed 20 per cent with light and dark green mottling and distortion due to Mosaic.

HOT HOUSE RHUBARB FROM WASHINGTON

Gray Mold Rot (Botrytis) found causing decay at the base of the stalks in 15 to 20 per cent of the stock in some lots.

RUTABAGA FROM CANADA

Fusarium dry rot in crowns of 8 per cent of one lot.

TOMATOES FROM MEXICO

Late Blight Rot (Phytophthora infestans) severe in many cars during past month. Decay ranges from 3 to 40 per cent. This disease developed following heavy rains on the West Coast of Mexico.

Certain lots of Mexican stock are also showing a great deal of Nailhead Spot (Macrosporium). Many of these spots are in the young stages, indicating that most of them develop during the transit period. Decay induced by species of Alternaria and Cladosporium often follows Nailhead Spot in Mexican tomatoes.

NEW YORK MARKET PATHOLOGY NOTES

Cyril O. Bratley

STRAWBERRIES

The strawberries from the Plant City section of Florida have continued to arrive on the New York market in a surprisingly disease free condition. The weather in Florida has greatly retarded the season. Two driving rains about a week apart coupled with the continued cold weather has hindered the development of high grade berries. During early March, the growers were packing less than half of the berries picked. The remainder sold as seconds or were discarded as culls.

In thirty cars examined in New York, there was an average of less than one per cent decay.

Gray Mold Rot (Botrytis cinerea) was the chief decay found. An occasional crate showed as much as 5 per cent of the fruit affected. The presence of this decay was no doubt due to carelessness of the packers in failing to discard all berries showing decay.

Rhizoctonia Brown Rot (Rhizoctonia sp.) was found affecting an occasional berry in most crates. Berries infected with Rhizoctonia are easily identified by the sand which clings to the decayed areas despite the washing given the berries previous to packing. The presence of sand on the lesions, coupled with the fact that the decay enlarges very slowly during transit, signifies that the berries showed the infections at time of packing. The cool rainy weather in Florida this winter seems to have afforded better conditions than usual for infection of berries by Rhizoctonia.

PEARS

A number of cars of Winter Nelis pears from Yakima, Washington have arrived in New York in a poor condition. Many of the pears have shown a slight brownish discoloration of the skin over from a fourth to a half of the surface of the surface of the fruit. The affected areas have the appearance of storage scald.

Blue Mold Rot (Penicillium expansum) was found to affect about 5 per cent of the fruit in all cars examined. The decay exhibited itself in a slightly different manner than would be expected at this season of the year. The lesions were usually small, ranging from one-fourth to three-fourths of an inch in diameter. Another somewhat unusual characteristic was the rela-

tively large number of infections at the stem end of the fruit. In these cases the fungus appeared either to have entered through the stem or through small cracks where the stem joins the fruit.

ASPARAGUS.

California asparagus in express car shipments has been arriving in New York in excellent condition. The members of the trade on the New York market consider this commodity to be showing less decay than it has for several years. In twenty cars examined, no decay was found.

PLANT QUARANTINE NOTES

H. S. Dean

Port interceptions:

Septoria sp. on lemon purchased in Germany, intercepted (in ships' stores) at Philadelphia, Pa., February 13, 1931, by Mr. A. B. Wells. Det.: Mr. H. R. Fulton.

Hendersonia sarmentosum var. mahoniae on leaves of Berberis sp. from Japan (in furnishings), intercepted at Seattle, Wash., Jan. 24, 1931, by Mr. W. H. Wheeler. Det.: Mr. G. H. Martin.

Phoma napa-brassicae on turnip from India and Holland (in ships' stores), intercepted at Philadelphia, Pa., Feb. 21, 1931, by unnamed inspector and Mr. A. B. Wells, respectively. Det.: Mr. G. H. Martin.

Leptosphaeria coniothyrium on gooseberry plants from Germany (in mail), intercepted at New York City, Feb. 17, 1931, by Messrs. J. R. Garrett, and O. G. Fitzgerald. Det.: Mr. G. H. Martin.

Phyllosticta pittospori on Pittosporum sp. leaves from Japan (in furnishings) intercepted at Seattle, Wash., Feb. 4, 1931, by Mr. C. V. Scott. Det.: Mr. G. H. Martin.

Phoma cajani on pigeon pea from Porto Rico (in ships' stores), intercepted at Philadelphia, Pa., Feb. 2, 1931, by Mr. J. A. Ramos. Det.: Mr. G. H. Martin.

Phoma sp. in decayed corms of Cyclamen neapolitanum from Holland (in cargo), intercepted at Washington, D. C., Dec. 18, 1930, by Mr. D. P. Limber. Det.: Dr. F. Weiss.

Cercospora brassicicola on Brassica japonica (host det.: Mr. D. Lumsden) from Japan (in ships' stores), intercepted at Seattle, Wash., Feb. 13, 1931, by Mr. M. J. Forsell. Det.: Mr. G. H. Martin.

Phomopsis coneglanensis on Aesculus brioti from Germany (in cargo), intercepted at Washington, D. C., Feb. 19, 1931, by Mr. D. P. Limber. Det.: Mr. G. H. Martin.

Diplodia meleana on Ulmus campestris twigs from France (in mail), intercepted at Washington, D. C., Feb. 18, 1931, by Mr. D. P. Limber. Det.: Mr. G. H. Martin.

Cercospora vaginae on sugarcane leaves from Cuba (in baggage), intercepted at Philadelphia, Pa., Feb. 13, 1931, by Messrs. M. Kisliuk and W. W. Chapman. Det.: Mr. J. A. Stevenson.

Ascochyta abelmoschi on okra from Cuba (in cargo), intercepted at New Orleans, La., Feb. 6, 1931, by Messrs. Moreland, Kerr and Morris. Det.: Mr. G. H. Martin.

Thielaviopsis paradoxa on sugarcane from Salvador (in baggage), intercepted at New Orleans, La., Feb. 2, 1931, by Mr. J. C. Pritchett; also from Trinidad (in quarters), intercepted at Philadelphia, Pa., Feb. 25, 1931, by U. S. Customs Guard Harry Morris. Det.: Mr. J. A. Stevenson.

Diplodia tubericola on yam from South Nigeria (in cargo), intercepted at New York City, Jan. 15, 1931, by Mr. S. D. Whitlock. Det.: Dr. L. L. Harter.

Uromyces appendiculatus on string bean pods from Chapala, Mexico (in cargo), intercepted at El. Paso, Tex., Feb. 18, 1931, by Mr. W. A. Harrison. Det.: Mr. H. S. Dean.

Paraphelenchus pseudoparietinus in potatoes from Denmark (in ships' stores), intercepted at Philadelphia, Pa., Feb. 20, 1931, by Mr. W. W. Chapman. Det.: Dr. G. Steiner.

Caconema radicicola in Xanthosoma sp. (host det.: Mr. R. A. Young) from Cuba (in cargo), intercepted at New York City, Feb. 9, 1931, by Mr. F. G. Inman. Det.: Dr. G. Steiner.

Caconema radicicola in yam from Japan (in baggage), intercepted at Seattle, Wash., Feb. 4, 1931, by Mr. C. V. Scott. Det.: Dr. G. Steiner.

Some specimens collected by inspectors in the vicinity of their respective stations:

Cryptosporium falcatum on Arctostaphylos uva-ursi, collected at Stuck River, near Kent, King County, Wash., Feb. 13, 1931, by Mr. W. H. Wheeler. Det.: Mr. G. H. Martin.

Cercospora canescens on Lima beans from Rio Piedras and Arecibo, Porto Rico, collected in the field, Jan. 12 and 16, 1931, respectively, by Messrs. A. S. Mills and C. G. Anderson. Det.: Mr. G. H. Martin.

Pucciniopsis caricae on papaya, collected at Rio Piedras, Porto Rico, Jan. 25, 1931, by Mr. A. S. Mills. Det.: Mr. G. H. Martin.

Colletotrichum lindemuthianum on Lima beans collected (in field) at Rio Piedras, Porto Rico, Jan. 12, 1931, by Messrs. A. S. Mills and C. G. Anderson. Det.: Mr. G. H. Martin.

Caconema radicicola on beet roots, collected at Galveston, Tex., Feb. 9, 1931, by Mr. C. P. Trotter. Det.: Dr. G. Steiner.

(See also report by Miss Bryan on page 20 and by Dr. Steiner on page 21.)